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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q64988

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Giovanni PAOLI

Technology Center 2600

Appln. No.: 09/881,722

Group Art Unit: 2633

Confirmation No.: 7955

Examiner: David C. Payne

Filed: June 18, 2001

For: METHOD AND TRANSCEIVER FOR THROUGH-AIR OPTICAL
COMMUNICATIONS

RESPONSE UNDER 37 C.F.R. § 1.111

MAIL STOP NON-FEE AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated August 11, 2004, Applicant submits the following
remarks.

Claims 1-12 are all the claims pending in the application.

Claims 1, 2, 4-7 and 9-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable
over USP 5,390, 040 to Mayeux in view of USP 6,091,529 to Fischer et al. Claims 3 and 8 are
objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in
independent form including all of the limitations of the base claim and any intervening claims.
Applicant respectfully traverses these rejections, and requests reconsideration and allowance of
the pending claims in view of the following arguments.

Claim 1 of the present application recites a transceiver for transmitting signals coming
from a source of signal-carrying coherent light to another transceiver, said transceiver

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comprising: a receiving reflecting surface for reflecting the received signal-carrying coherent light, said receiving surface defining an outer edge; and a signal aperture for outputting the coherent light to be transmitted, said signal aperture extending near to the outer edge of the receiving surface.

The Examiner has agreed that Mayeux does not disclose transmitting or receiving coherent light. The Examiner has also agreed that Mayeux does not disclose that the receiving surface is defined by an outer edge. However, the Examiner has asserted that Fischer disclosed using coherent light. The Examiner then combines Mayeux and Fischer, and rejects the claim 1. Applicant respectfully disagrees.

As shown in Fig. 1 of the present application, a main receiving reflecting surface 20, a concave paraboloidal surface, is formed on the front portion of a main dish 18. A first reflecting surface 16 is formed as a hole in the opposite side of the main dish 18, and has an angle of 45° to the incoming light beam. A second conical reflecting surface 32 is coaxial with the first reflecting surface 16 and also has an angle of 45°. A single aperture 26 in the form of an annulus is provided substantially adjacent to the outer edge of the main receiving reflecting surface 20.

A coherent light beam, carrying the signal to be transmitted from a source 12, is collimated by a lens 14 onto the first reflecting surface 16. The light beam is thus reflected towards the second reflecting surface 32. The light beam is then reflected towards the aperture 26 in order to be transmitted through the air. At the same time, rays from another transceiver are reflected from the main receiving reflecting surface 20 to a plane mirror 22 and then to a receiving apparatus 24 for processing.

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On the other hand, Mayeux discloses a transceiver employing a gimbaled steering mirror. As shown in Fig. 2 of Mayeux, a steering mirror is gimbaled to rotate about both an azimuth axis and an elevational axis to reflect an incoming beam 100 into a telescope along its optical axis. A primary reflector 20 of the telescope focuses the incoming beam 100 onto a secondary reflector 22 of the telescope. The beam is then reflected by the secondary reflector 22 and focused in the plane of a system field stop 24. A part of the optical energy is directed to a photodiode 30, and the remaining optical energy is directed to a photodiode data detector 32. The transmitter of the Mayeux transceiver consists of a number of laser assemblies arranged around the periphery of the telescope. Each laser assembly consists of a laser diode 50. A transmitted beam 200 is collimated by a collimating lens 52 and then directed onto a region of the steering mirror 10 that is outside of the field of view of the telescope. A baffle plate 40 separates the path of the outgoing beam 200 from the receiver telescope to prevent interference between the outgoing beam 200 and the incoming beam 100.

The Examiner has asserted that the element 22 of Fig. 2 of Mayeux teaches the recited single aperture for outputting the light to be transmitted. Applicant disagrees. According to the specification and drawings of Mayeux, the element 22 of Fig. 2 is a reflector and is in the path of the incoming beam 100. As shown in Fig. 2 of Mayeux, the incoming beam 100 is reflected by the steering mirror 100 to the primary reflector 20, reflected by the primary reflector 20 to the secondary reflector 22, and then reflected by the secondary reflector 22 to the plane of the system field stop 24. The element 22 of Mayeux is not in the path of the outgoing beam 200 at

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all, and nothing in Mayeux indicates that the element 22 of Fig. 2 of Mayeux outputs light to be transmitted.

The Examiner has asserted that Mayeux teaches that the single aperture extends near to the outer edge of the receiving surface. However, as discussed above, the element 22 of Fig. 2 of Mayeux cited by the Examiner is a reflector, not an aperture. In addition, the element 22 of Fig. 2 of Mayeux is not extending near the outer edge of the receiving surface 10 in Mayeux.

The Examiner's statements about the limitation that the receiving surface defines an outer edge are confusing. In the third line from the bottom of page 2 of the Office Action, the Examiner has stated that Mayeux does not disclose that the receiving surface is defined by an outer edge. However, in the next sentence, the Examiner has stated that Mayeux disclosed the reflecting surface (Figure 2 #50) is positioned at the "exterior aperture of the device." It appears that the Examiner's statements conflict with each other. In addition, the element 50 of Fig. 2 of Mayeux is a laser diode, not a reflecting surface. Further, Applicant has searched the texts of Mayeux and Fischer completely, but could not find the words "exterior aperture of the device" cited by the Examiner at all.

Thus, Mayeux fails to teach or suggest at least the a single aperture which outputs the coherent light to be transmitted and extends near to the outer edge of the receiving surface, and the receiving surface defining the outer edge. Fischer provides a method for establishing a channel grid for optical transmission channels, and does not supply any of Mayeux's deficiencies. Thus, even if one skilled in the art were to combine the teachings of Mayeux and

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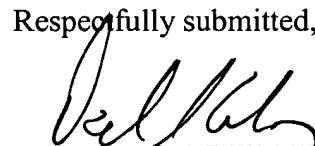
Fischer, as the Examiner has suggested, the combination would not result in the invention of claim 1.

Accordingly, Applicant respectfully submits that claim 1 and its dependent claims 2-6 are patentable. Claims 7-10, 11, and 12 are patentable for the same reasons.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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